

CLAIMS

1. A fusion protein comprising (a) a gelonin amino acid sequence that has enzymatic activity and (b) a targeting sequence that allows the internalization of said fusion protein, wherein said targeting sequence is an antibody, an antigen-binding portion of an antibody, a hormone, a lymphokine or a growth factor.
2. The fusion protein of claim 1, wherein said gelonin sequence is that of SEQ ID NO. 2.
3. The fusion protein of claim 1, wherein said gelonin sequence is that of SEQ ID NO. 101.
4. The fusion protein of claim 1, further comprising a linker sequence between said gelonin sequence and said targeting sequence, wherein said gelonin possesses enzymatic activity, said antibody is capable of recognizing antigen and said hormone, lymphokine or growth factor is capable of binding to a cell that has a receptor for said hormone lymphokine or growth factor.
5. The fusion protein of claim 4, wherein said linker sequence is that of SEQ ID NO. 56 or SEQ ID NO. 57.
6. The fusion protein of any one of claim 1-5, wherein said targeting sequence is an antibody.
7. The fusion protein of any one of claims 1-5, wherein said targeting sequence is an antigen-binding portion of an antibody.
8. The fusion protein of claim 7, wherein said antigen-binding portion of said antibody is an Fab.

9. The fusion protein of claim 7, wherein, wherein said antigen-binding portion of said antibody is an Fab'.
10. The fusion protein of claim 7, wherein said antigen-binding portion of said antibody is an F(ab')<sub>2</sub>.
11. The fusion protein of claim 7, wherein said antigen-binding portion of said antibody is an Fv.
12. The fusion protein of claim 7, wherein said antigen-binding portion of said antibody has a single variable domain.
13. The fusion protein of claim 7, wherein said antibody is a single-chain antibody.
14. The fusion protein of claim 7, wherein said fusion protein is multivalent.
15. The fusion protein of any one of claims 1-5, wherein said targeting sequence is a hormone.
16. The fusion protein of any one of claims 1-5, wherein said targeting sequence is a lymphokine.
17. The fusion protein of any one of claims 1-5, wherein said targeting sequence is a growth factor.